

What is claimed is:

1. An isolated nucleic acid molecule comprising the DNA sequence of SEQ ID NO:1.
2. An isolated nucleic acid molecule encoding an amino acid sequence comprising the sequence of SEQ ID NO:2.
3. An isolated nucleic acid molecule that hybridizes to either strand of a denatured, double-stranded DNA comprising the nucleic acid sequence of any one of claims 1 or 2 under conditions of moderate stringency in 50% formamide and 6XSSC, at 42°C with washing conditions of 60°C, 0.5XSSC, 0.1% SDS.
4. The isolated nucleic acid molecule as claimed in claim 3, wherein said isolated nucleic acid molecule is derived by *in vitro* mutagenesis from SEQ ID NO:1.
5. An isolated nucleic acid molecule degenerate from SEQ ID NO:1 as a result of the genetic code.
6. An isolated nucleic acid molecule, which is human SIGIRR DNA, an allelic variant of human SIGIRR DNA, or a species homolog of SIGIRR DNA.
7. A recombinant vector that directs the expression of a nucleic acid molecule selected from the group consisting of the nucleic acid molecules of claims 1, 2, 5, and 6.
8. A recombinant vector that directs the expression of a nucleic acid molecule of claim 3.
9. A recombinant vector that directs the expression of a nucleic acid molecule of claim 4.
10. An isolated polypeptide encoded by a nucleic acid molecule selected from the group consisting of the nucleic acid molecules of claims 1, 2, 5, and 6.

11. An isolated polypeptide according to claim 10 having a molecular weight of approximately 46 kD as determined by SDS-PAGE.

12. An isolated polypeptide according to claim 10 in non-glycosylated form.

13. An isolated polypeptide encoded by a nucleic acid molecule of claim 3.

14. An isolated polypeptide according to claim 13 in non-glycosylated form.

15. An isolated polypeptide encoded by a nucleic acid molecule of claim 4.

16. An isolated polypeptide according to claim 15 in non-glycosylated form.

17. Isolated antibodies that bind to a polypeptide of claim 10.

18. Isolated antibodies according to claim 17, wherein the antibodies are monoclonal antibodies.

19. Isolated antibodies that bind to a polypeptide of claim 13.

20. Isolated antibodies according to claim 19, wherein the antibodies are monoclonal antibodies.

21. Isolated antibodies that bind to a polypeptide of claim 15.

22. Isolated antibodies according to claim 21, wherein the antibodies are monoclonal antibodies.

23. A host cell transfected or transduced with the vector of claim 7.

24. A method for the production of SIGIRR polypeptide comprising culturing a host cell of claim 23 under conditions promoting expression, and recovering the polypeptide from the culture medium.

25. The method of claim 24, wherein the host cell is selected from the group consisting of bacterial cells, yeast cells, plant cells, and animal cells.

26. A host cell transfected or transduced with the vector of claim 8.

27. A method for the production of SIGIRR polypeptide comprising culturing a host cell of claim 26 under conditions promoting expression, and recovering the polypeptide from the culture medium.

28. The method of claim 27, wherein the host cell is selected from the group consisting of bacterial cells, yeast cells, plant cells, and animal cells.

29. A host cell transfected or transduced with the vector of claim 9.

30. A method for the production of SIGIRR polypeptide comprising culturing a host cell of claim 29 under conditions promoting expression, and recovering the polypeptide from the culture medium.

31. The method of claim 30, wherein the host cell is selected from the group consisting of bacterial cells, yeast cells, plant cells, and animal cells.

32. A method for the determination of the molecular weight of a sample protein comprising comparing molecular weight of a sample protein with the molecular weight of a polypeptide of claim 10;

wherein the comparison of molecular weights comprises application of the sample protein and polypeptide to an acrylamide gel, resolution of the sample protein and polypeptide using an electrical current, and application to the gel of a detection reagent, which stains the sample protein and polypeptide.

33. A kit for the determination of the molecular weights of peptide fragments of a sample protein comprising the following:

a vessel;

a polypeptide of claim 10;

at least one enzyme selected from the group consisting of Asparaginylendopeptidase, Arginylendopeptidase, *Achromobacter* protease I, Trypsin, *Staphylococcus aureus* V8 protease, Endoproteinase Asp-N, and Endoproteinase Lys-C;

a mutated polypeptide from said polypeptide by *in vitro* mutagenesis, wherein a site of enzymatic cleavage by the selected enzyme has been removed; and

fragmented peptides derived from said peptide by enzymatic cleavage with the selected enzyme;

wherein said polypeptide and said sample protein are contacted with the selected protease; and wherein the protein, polypeptides, and fragmented peptides are visualized by application of the protein, polypeptides, and fragmented peptides to an acrylamide gel, resolution of the protein, polypeptides, and fragmented peptides using an electrical current, and application to the gel of a detection reagent, which stains the protein, polypeptides, and fragmented peptides.

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